144
305
Recd. in
Div. 29
12 Mar. '51

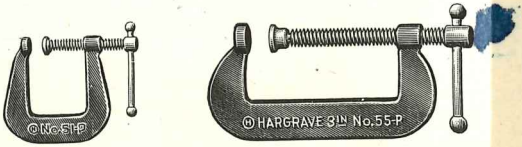
Established 1879

Incorporated 1884

Catalog No. 112

SUPER-JUNIOR CLAMPS

FORGED STEEL, HEAT-TREATED FRAMES



300% Stronger Than Malleable Clamps

SEVEN SIZES — 1" TO 3" OPENINGS

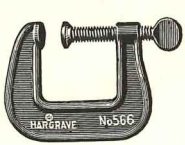
DEPTHS ¾ in. to 2½ in.

Suitable for Jig and Pattern Work, Welding, Gluing and Aircraft construction. Will last many times longer than malleable clamps.

Stock	Opening	Depth	Lbs., Doz.
No. 50	1 in.	¾ in.	1
No. 51	1 in.	1½ in.	2¼
No. 52	1¼ in.	1¼ in.	2½
No. 53	1½ in.	1½ in.	3½
No. 54	2 in.	1¼ in.	4
No. 55	3 in.	1⅜ in.	6½
No. 56	2½ in.	2½ in.	8

Flat wing handle optional.

Shipment from factory in packages only—50, 51, 52, 53, 1 doz. per box. 54, 55, 56, ½ doz. per box.



SMALL "C" CLAMPS

Strong Malleable Frames and Steel Screws.

Used extensively in Aircraft and many other industrial plants. With flat Wing and Riveted Button Tip. Natural Finish.

Nos. 566-568

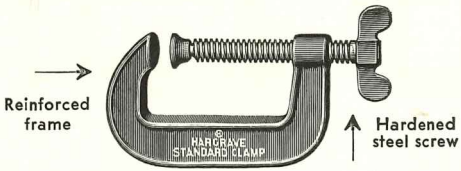
Stock	Opening	Depth	Lbs., Doz.
No. 566	1¼ in.	1¼ in.	2½
No. 568	2½ in.	2½ in.	9¼

Packed in bulk.

STANDARD CARRIAGE CLAMP No. 540

(Reg. U. S. Pat. Off.)

EACH CLAMP IS MACHINE TESTED



FRAME—Special analysis of malleable iron, shaped to give greatest strength for the weight.

SCREW—Steel, heat-treated to prevent bending or breaking, and battering of threads. "Acme" thread insures long life and permits rapid adjustment.

Furnished with steel oscillating (ball and socket) tip.

Opening	Depth	Lbs., Doz.	Opening	Depth	Lbs., Doz.
3 in.	1 7/8 in.	12	8 in.	3 1/4 in.	53
4 in.	2 1/16 in.	21 3/4	10 in.	3 5/8 in.	76 1/2
5 in.	2 1/2 in.	26 1/2	12 in.	3 5/8 in.	95
6 in.	2 3/4 in.	31 1/4	14 in.	3 3/4 in.	108

(For comparative strength, see page 9.)

IMPROVED SPRING CLAMP

Can be applied or removed instantly. Surface of work is tangent to curve of jaw at any opening. Holds firmly without marring the work.

Stock	Opening	Length	Weight, Doz.
No. 1	1 in.	4 in.	1 lb. 9 oz.
No. 2	2 in.	6 in.	4 lbs. 5 oz.
No. 3	3 in.	9 in.	8 lbs. 8 oz.

Rubber or plastic tipped Spring Clamps furnished special. Write for prices.

SUPERCLAMPS — Forged Steel (Patented)

No. 44—REGULAR SERVICE

The No. 44 SUPER-CLAMP is approximately the same weight as the Standard Carriage Clamp, but has more resistance to both tensile and transverse strain.

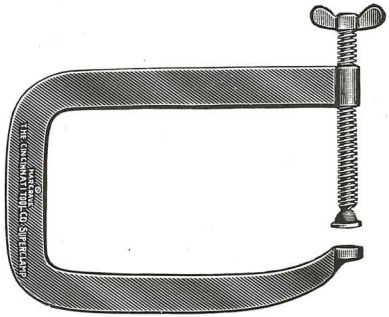
FRAME — High carbon steel, heat-treated, formed by our own process, which permits the use of a much stiffer grade of steel than other methods of forging. Will stand overloads without permanent distortion.

SCREW—Steel, heat-treated; large diameter; powerful "Acme" thread. Full length. Oscillating steel (ball and socket) tip.

Opening, in.	2	3	4	6	8	10	12
Depth, in.	1¾	2¼	2½	2¾	3½	3½	3½
Test Load, lbs.	2200	2400	3000	3700	4500	5400	7200
Approx. Wt. lbs. dozen	12	19	27	41	65	92	106

(For comparative strength, see page 9.)

No. 44X — DEEP REACH



The following list gives dimensions on stock sizes. Write us about special sizes.

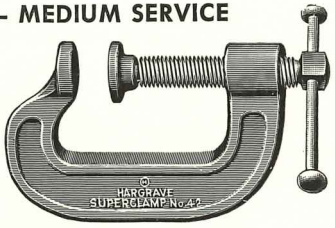
Size, in.	6 x 8	8 x 12	12 x 16
Opening, in.	6	8	12
Depth, in.	8	12	16
Approx. Wt., lbs., each	7	13	19
Size of Steel, in.	½ x 1½	½ x 2	½ x 2
Diameter of Screw, in.	⅝	¾	⅞

No. 42 — MEDIUM SERVICE

No. 42

FRAME is forged from an extremely stiff steel and heat-treated.

SCREW is hardened steel with N. S. C. thread and Sliding Pin (Vise Type) Handle.



Maximum Opening, in.	4	6	8	10
Minimum Opening, in.	5/8	2 5/8	4 1/16	6 1/16
Depth of Throat, in.	2 1/2	2 3/4	2 3/4	3
Diameter of Screw, in.	3/4	3/4	3/4	3/4
Weight, each, lbs.	4 1/2	5 1/2	6 1/4	8 1/2
Test Load, lbs.	8,000	9,000	10,000	11,000
Maximum Opening, in.	12	15	18	
Minimum Opening, in.	8 1/16	10	13	
Depth of Throat, in.	3	3 1/4	3 1/4	
Diameter of Screw, in.	7/8	7/8	7/8	
Weight, each, lbs.	9	13 1/2	15	
Test Load, lbs.	12,000	13,000	14,000	

No. 40 — HEAVY SERVICE

FRAME is forged from an extremely stiff steel and heat-treated.

SCREW is hardened steel with N. S. C. thread and Square Head.

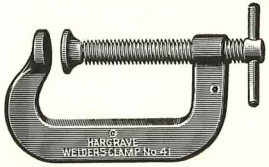
Maximum Opening, in.	3/4	1 1/4	1 3/4	2 1/4
Minimum Opening, in.	0	0	3/4	7/8
Depth of Throat, in.	1 1/16	1 1/8	1 9/16	1 7/8
Diameter of Screw, in.	3/8	3/8	1/2	5/8
Weight, each, lbs.	1/3	3/4	1 5/8	3 1/2
Test Load, lbs.	2,000	4,500	7,000	10,000
Maximum Opening, in.	3 1/4	4 1/2	5 1/2	6 1/2
Minimum Opening, in.	1 3/8	2	2 1/2	3 1/8
Depth of Throat, in.	2 3/4	2 3/4	3 1/4	3 1/4
Diameter of Screw, in.	7/8	7/8	7/8	1
Weight, each, lbs.	6 1/4	9 1/2	12 1/3	15 1/6
Test Load, lbs.	13,000	16,000	19,000	22,000

(For comparative strength, see page 9.)

HARGRAVE WELDERS' CLAMPS
with Patented Anti-Spatter Screws

No. 41 Regular Service asd No. 43 Heavy Service Welders' Clamps have patented solid alloy screws that resist spatter permanently. The few particles of spatter that may stick to this type of screw are easily cleaned off. Do not confuse HARGRAVE Welders Clamps with ordinary clamps having plated-type screws.

No. 41 — REGULAR SERVICE



Patented

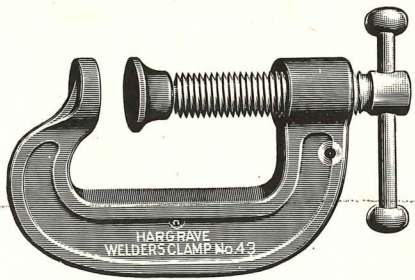
FRAME is forged steel, heat-treated (not malleable iron or cast steel). Note test loads listed below.

SCREW is patented solid alloy—anti-spatter.

TIP is ball and socket type—lines up work that is not square.

Opening, in.	2	3	4	6
Depth Throat, in.	1 3/4	2 1/4	2 1/2	2 3/4
Diameter Screw, in.	1/2	5/8	5/8	3/4
Weight, lbs., each	1 1/6	1 1/4	2 1/4	3 1/2
Test Load, lbs.	2,200	2,400	3,000	3,700

No. 43 — HEAVY SERVICE



Patented

FRAME is forged steel, heat-treated (not malleable iron or cast steel). Note test loads listed below.

SCREW is patented solid alloy — anti-spatter.

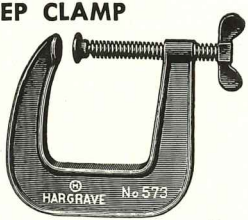
TIP is ball and socket type —lines up work that is not square.

Maximum Opening, in.	4	6	8	10	12
Minimum Opening, in.	0	0	2	3	5
Depth of Throat, in.	2 1/2	2 3/4	2 3/4	3	3
Diameter of Screw, in.	7/8	7/8	1	1 1/8	1 1/8
Weight, each, lbs.	4 3/4	6 1/2	7 1/8	10 1/8	11
Test Load, lbs.	8,000	9,000	10,000	11,000	12,000

(For comparative strength, see page 9.)

No. 573 — DEEP CLAMP

A medium weight clamp, similar to the Standard Carriage Clamp, but with a deeper reach. Malleable frame; 5/8-inch steel screw, heat-treated, with oscillating (ball and socket) tip.

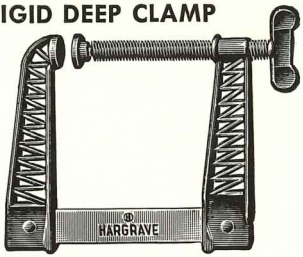


POWER TESTED

Opening, in.	3 1/2	4 1/2	6 1/2
Depth, in.	4 1/2	4 1/2	4 1/2
Weight, doz., lbs.	27 3/4	32 1/4	37 1/4

No. 574 — RIGID DEEP CLAMP

Especially designed for heavy duty work. Malleable uprights riveted to high carbon steel bar, 1/2" x 2". Steel screw, 7/8" diameter, heat-treated. Oscillating (ball and socket tip). All 9" deep.



Size, in.	6 x 9	8 x 9	12 x 9	16 x 9
Opening, in.	6	8	12	16
Weight, lbs., each	15	15 1/2	16 1/2	18

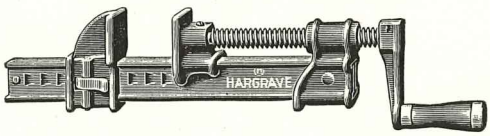
PRESS SCREWS

No. 36-T

No. 36-W

STEEL SCREW, 5/8-inch diameter, with 6-inch travel, "USS" thread. TIP, 1 1/4-inch diameter. Threaded nut drives into 1-inch hole and is held firmly by two screws.

IMPROVED "I" BAR CLAMP No. 640 (Patented)



NO RUINED JOINTS FROM SLIPPING

Designed and constructed for the hard every-day grind of production. Its exclusive features of superiority make it the choice of the world's largest users.

BAR—Shaped to stand the greatest strain for the weight. Wide smooth flange will not mar the work. Size 1½ x ⅝ x ⅛ in.

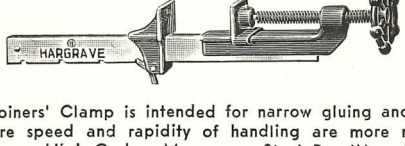
NOTCHES—Formed in web, leaving the bar full strength as no metal is removed. Spaced ½ in. apart.

SLIDE—Malleable. Cannot slip or bind. Always easily released. Heavy-tempered steel dog engages the notches making a positive stop and insuring years of service without repairs. Clamping surface, 2 x 1⅞ in.

TIP—Malleable. With case-hardened thrust bearing for end of screw, practically eliminating wear.

SCREW—Steel, ⅝-inch diameter, heat-treated, with deep-cut "ACME" thread and long bearing, insuring long life. Crank handle steel with improved wood grip.

JOINERS' CLAMP No. 458



Our Joiners' Clamp is intended for narrow gluing and clamping where speed and rapidity of handling are more necessary than power. High Carbon Manganese Steel Bar 1⅛ x $\frac{3}{16}$ in.

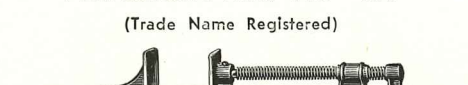
No. 458—Joiners' Clamps—With Bar 1⅛ x $\frac{3}{16}$ in.				
Openings, ft.	1	1½	2	2½

ALL METAL "T" HANDLE

This all-metal crank handle can be supplied on all clamps having either ⅝ in. or ½ in. diameter screws.

PERFECTION Nos. 440 - 450

(Trade Name Registered)



These Clamps are made in two patterns—regular and heavy. The regular pattern has clamping surfaces of jaws 2 in. deep, 1⅞ in. wide, ⅝ in. screw. The clamping surfaces of the heavy pattern are 2¼ x 2¼ in., ¾ in. screw.

The bar is high carbon manganese spring steel giving great strength. Crank, frame, tip and slide are of the best grade of malleable iron. Dog for slide is tempered steel.

No. 440—Regular Pattern—With Bar 1½ x ¼ in.

Openings, ft.	2	2½	3	4	5	6

No. 450—Heavy Pattern—With Bar 1¾ x ⅜ in.

Openings, ft.	3	4	5	6	8	10

HEAVY DUTY BAR CLAMP No. 750

Designed especially for the heaviest type of work such as truck and trailer body work, tank construction, and heavy steel fabrication.

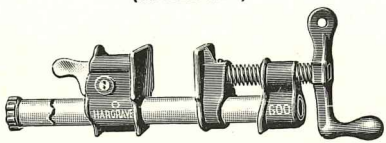
⅝ x 2½ in. high carbon steel bar.

Frame, tip, and slide are heavy, reinforced malleable. Clamping surface 3 x 4 in., 1 in. diameter screw, ACME thread, heat-treated.

Opening, ft.	3	4	5	6	7	8	10	12
Weight, lbs., each	34	39	44	49	54	59	69	79

CAUTION: Check specifications carefully before ordering as this is the strongest and heaviest bar clamp on the market.

CLAMP FIXTURES
No. 600 — Fits ¾" Pipe
(MALLEABLE)

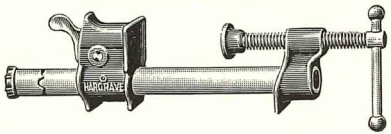


Clamping surfaces are 1¾ in. x 1¾ in.

The most popular Clamp Fixture. Easy to assemble. Can be applied to any odd length of pipe. We recommend black iron pipe, extra heavy for ordinary clamping and double extra heavy when greater pressure is required. (Pipe not furnished.)

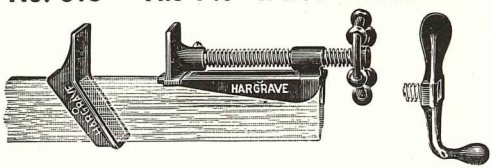
Slide will not slip under pressure—releases instantly. Hardened Steel Cam is trigger-type. Screw is ⅝ in. diameter, heat-treated. "ACME" thread insures long life.

No. 620 —CLAMP FIXTURE
For ½" Pipe



For ½ in. Pipe
Same construction as No. 600 except ½ in. diameter screw, oscillating (ball and socket) tip. Clamping surface of slide 1½ x 1½ in.

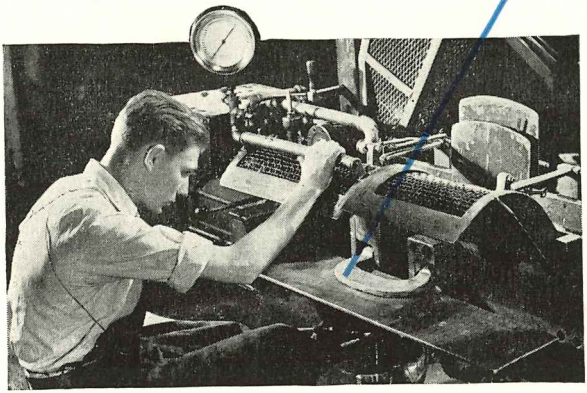
No. 615 — Fits 1⅛" x 2¼" Wood Bar



Quickly and easily applied to wood bar, any length. Malleable iron parts, steel screw, ½ in. diameter, heat-treated. Clamping surfaces 1½ in. wide, $1\frac{7}{16}$ in. high.

No. 615—(Wheel Handle). No. 615-18½—("T" Handle).

Individually Tested



Hydraulic Clamp Tester, which quickly and accurately applies loads to 30,000 lbs. (15 tons). Each HARGRAVE Standard Clamp, Body Clamp, and Superclamp is tested to more than its rated load. HARGRAVE Steel Bar Clamps are frequently tested to insure their efficiency.

This Tester is also useful in experimental work and in making comparative tests.

Space does not permit us to give the TEST LOAD which is applied to all sizes of each pattern. However, to enable you to judge which is best suited for any particular operation, we give number of pounds applied in production test of one popular size of each as follows:

No. 540—6-in. Standard Carriage Clamp..... 2300 lbs.
No. 44—6-in. Forged Steel Superclamp..... 3700 lbs.
No. 42—6-in. Forged Steel Superclamp..... 9000 lbs.
No. 40—6½-in. Forged Steel Superclamp.....22000 lbs.

Load applied to other sizes is in proportion to size and weight of the Clamp. TEST LOAD for each Clamp is merely the number of pounds strain to which it has been tested, to discover any defect. Each Clamp will actually stand more.

(See CHISEL TEST on page 17.)

QUICK CLAMPS (Patented)

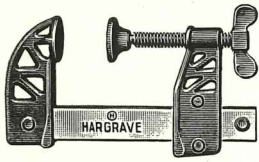
Especially useful in pattern making, boat and ship building, automobile body, airplane and parlor frame work.

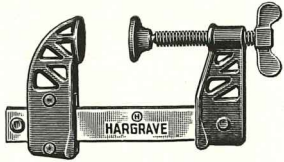
The patented Clutch will not slip or bind. Always easily released by hand. Bar and screw are steel, other parts are malleable.

"DEPTH" IS DISTANCE FROM CENTER OF SCREW TO BAR

Nos. 498-500-514 Patterns (Movable Frame, Stationary Foot)

Nos. 499-501-503 Patterns (Stationary Frame, Movable Foot)





No. 498

Bar, 1 x 5/16 in. Depth, 2 in.

Opening, Inches	Approx. Wt., Doz.
6	23½ lbs.
8	30¾ lbs.
12	35¼ lbs.
18	42 lbs.
24	48¾ lbs.
30	55¼ lbs.

No. 499

Bar, 1 x 5/16 in. Depth, 2 in.

Opening, Inches	Approx. Wt., Doz.
12	35¼ lbs.
18	42 lbs.
24	48¾ lbs.
30	55¼ lbs.

No. 500

Bar, 1½ x ¼ in. Depth, 2½ in.

Opening, Inches	Approx. Wt., Doz.
12	51¾ lbs.
18	60 lbs.
24	68¼ lbs.
30	76½ lbs.
36	84¾ lbs.

No. 501

Bar, 1½ x ¼ in. Depth, 2½ in.

Opening, Inches	Approx. Wt., Doz.
12	51¾ lbs.
18	60 lbs.
24	68¼ lbs.
30	76½ lbs.
36	84¾ lbs.

No. 514

Especially Designed for Heavy Work.

Bar, 1¾ x ⅜ in. Depth, 3 in.

Opening, Inches	Approx. Wt., Doz.
6	78½ lbs.
8	83 lbs.
12	92 lbs.
18	105½ lbs.
24	119 lbs.
36	146 lbs.
48	173 lbs.
60	200 lbs.

No. 503

Bar, 1¾ x ⅜ in. Depth, 4½ in.

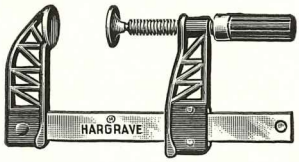
Opening, Inches	Approx. Wt., Doz.
6	70½ lbs.
8	75 lbs.
12	84 lbs.
18	97½ lbs.
24	111 lbs.
36	138 lbs.
48	165 lbs.

QUICK CLAMPS (Patented)

Hargrave Quick Clamps can be instantly applied or removed from the work; take up less room and save a great amount of time over ordinary clamps.

No. 496 - Light Weight
No. 506 - Med. Weight

(Movable Frame, Stationary Foot, Wood Handle on Screw.)



No. 496

Bar, 1/4 x 3/4 in. Depth, 2 1/2 in.

Opening, Inches	Approx. Wt., Doz.
8	13 1/4 lbs.
10	14 1/4 lbs.
12	17 3/4 lbs.
18	19 lbs.
24	24 3/4 lbs.

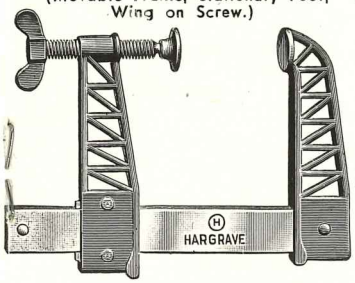
No. 506 (Medium)

Bar, 1 x 5/16 in. Depth, 3 1/2 in.

Opening, Inches	Approx. Wt., Doz.
12	40 3/4 lbs.
18	46 1/2 lbs.
24	52 1/4 lbs.
30	58 lbs.

Nos. 512-502-508-510 Patterns

(Movable Frame, Stationary Foot, Wing on Screw.)



No. 512

Bar, 1 1/2 x 1/4 in. Depth, 4 in.

Opening, Inches	Approx. Wt., Doz.
6	47 1/4 lbs.
8	50 lbs.
12	55 1/2 lbs.
18	63 3/4 lbs.
24	72 lbs.

No. 508

Bar, 1 3/4 x 3/8 in. Depth, 6 in.

Opening, Inches	Approx. Wt., Doz.
6	90 lbs.
8	95 lbs.
12	105 lbs.
18	119 lbs.
24	133 lbs.
36	147 lbs.

No. 502

Bar, 1 3/4 x 3/8 in. Depth, 4 1/2 in.

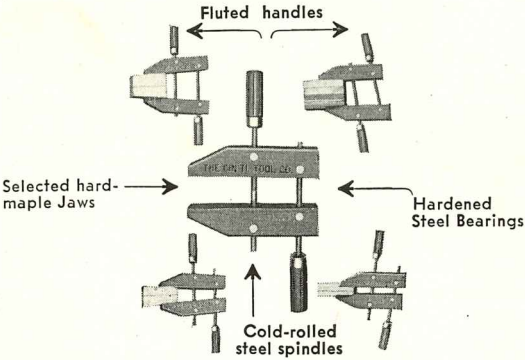
Opening, Inches	Approx. Wt., Doz.
6	70 1/2 lbs.
8	75 lbs.
12	84 lbs.
18	97 1/2 lbs.
24	111 lbs.
36	138 lbs.
48	165 lbs.
60	192 lbs.

No. 510

Bar, 2 x 1/2 in. Depth, 9 in.

Opening, Inches	Approx. Wt., Doz.
6	180 lbs.
8	187 lbs.
12	201 lbs.
18	222 lbs.
24	243 lbs.

STEEL SPINDLE HAND SCREWS
Each Jaw is Tested



Strong — Durable — Satisfactory

HARGRAVE Hand Screws are conventional in size and proportions, but have refinements of construction found in no other Hand Screw.

SPINDLES—Cold-drawn steel. "Acme" thread is longer wearing and has less frictional resistance than the "V" thread commonly used.

BEARINGS—Hardened steel, adding greatly to the life of the Hand Screw.

JAWS—Selected maple, properly seasoned and oiled.

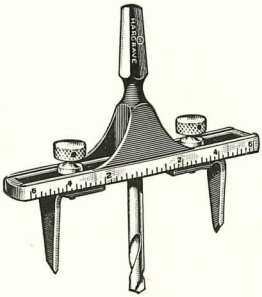
HANDLES—Fluted, giving good grip under all conditions.

Packed as follows: Four smaller sizes (6, 8, 10 and 12 in.), one-half dozen in a carton; three larger sizes (14, 16 and 18 in.), one-third dozen in a carton.

Adjustable Pattern	Length of Jaws	Opening	Weight, Doz.
No. 706	6 in.	3 in.	14 lbs.
No. 708	8 in.	4½ in.	28 lbs.
No. 710	10 in.	6 in.	36 in.
No. 712	12 in.	8½ in.	58 lbs.
No. 714	14 in.	10 in.	72 lbs.
No. 716	16 in.	12 in.	96 lbs.
No. 718	18 in.	14 in.	108 lbs.

Non-adjustable pattern (opening and closing the jaws parallel) can be furnished when desired.

CIRCLE METAL CUTTER No. 1406



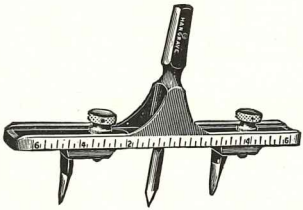
For cutting circular holes in sheet metal, wood or fiber. Useful for electricians, auto mechanics, sheet metal workers, etc.

The body of the tool is malleable iron, and the blades of best tool steel, ground and tempered for cutting metal.

Capacity for cutting circles from 1¼ in. to 6 in. in diameter.

No. 1406 has center drill to bore hole.

Also furnished with ½ in. Round Shank or No. 1 Morse Taper Shank, and High Speed Steel Knives.

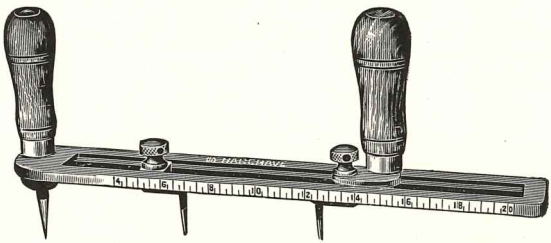


WASHER CUTTER (Brace) No. 407

Capacity, ⅞ in. to 6 in. Used for cutting gaskets from sheet lead, thin wood, leather, paper or rubber. cutting both inner and outer circle at tie same time. Used with any ordinary brace.

For Knives only specify No. 407-A
For Screws only specify No. 410

WASHER CUTTER — 20" (Hand) No. 411



This tool is adapted to cutting gaskets from 4 to 20 inches in diameter.

For Knives only specify No. 411-A
For Screws only specify No. 410

COLD CHISELS No. 200

"Individually Tested"

All HARGRAVE Chisels, Punches, Star Drills, Stone Points, etc., are Hand Forged from Special Analysis Alloy Steel.

The width of the blade of our Cold Chisels is the same as the diameter of the stock, which gives a massive durable tool and one which does not sting the hand.

Regular length Chisels and all styles of Punches are finished with Bright Dark Blue Lacquered Body and Polished Blades.

CAPE No. 223

HALF-ROUND No. 233

COLD CHISELS

Width Blade	Length	Size Stock
1/4 in.	5 in.	1/4 in.
5/16 in.	5 in.	5/16 in.
3/8 in.	5 in.	3/8 in.
1/2 in.	6 in.	1/2 in.
5/8 in.	6 1/2 in.	5/8 in.
3/4 in.	7 1/2 in.	3/4 in.
7/8 in.	8 in.	7/8 in.
1 in.	8 1/2 in.	1 in.

DIAMOND POINT No. 243

Cape, Half-Round, Diamond Point and Round-Nose Chisels

Cutting Edge	Length	Size Stock
1/8 in.	4 1/2 in.	5/16 in.
3/16 in.	5 in.	3/8 in.
1/4 in.	6 1/2 in.	1/2 in.
5/16 in.	7 in.	5/8 in.
3/8 in.	7 1/2 in.	5/8 in.
1/2 in.	8 in.	3/4 in.
5/8 in.	8 in.	3/4 in.
3/4 in.	8 1/2 in.	7/8 in.
7/8 in.	9 in.	1 in.

Ask about our TRIPLE TEST for each individual Chisel, Punch and Star Drill.

(See page 17.)

ROUND-NOSE No. 253

DRIFT PUNCHES No. 630

For driving out pins and bushings and lining up bolt and rivet holes. Hand forged. Point hardened and tempered.

Point	3/16	1/4	5/16	3/8
Steel	5/8	5/8	5/8	3/4
Length	10	10	10	10
Taper	5 1/4	4 3/4	4 3/4	5

LINING UP PUNCHES No. 620

Point	5/32	3/16	1/4	5/16	1/4
Steel	1/2	5/8	5/8	3/4	3/4
Length	10	12	12	12	18
Taper	6 1/2	8 1/2	8 1/2	8 1/2	9 1/2

SOLID PUNCHES No. 263

Point	1/16	1/8	5/32	3/16	1/4	5/16	3/8	1/2
Steel	1/4	5/16	3/8	3/8	1/2	1/2	5/8	5/8
Length	4	4 1/2	5	5 1/2	6	6 1/2	7	8

PIN PUNCHES

No. 2864 — 4 inches overall

Point	1/16	3/32	1/8	5/32	3/16
Steel	5/16	5/16	5/16	5/16	5/16
Pin Length	1/2	11/16	3/4	13/16	15/16

No. 2866 — 6 inches overall

Point	3/32	1/8	5/32	3/16	7/32	1/4
Steel	3/8	3/8	3/8	3/8	3/8	3/8
Pin Length	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8

No. 2869 — 9 inches overall

Point	1/8	3/16	1/4	5/16	3/8
Steel	1/2	1/2	1/2	1/2	1/2
Pin Length	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2

CENTER PUNCHES No. 284

Diameter of Steel	1/4 in.	3/8 in.	1/2 in.	5/8 in.
Diameter of Point	1/8 in.	3/16 in.	5/16 in.	3/8 in.
Length	3 1/2 in.	5 in.	6 in.	7 in.

PRICK PUNCHES No. 2873

Diameter of Steel	1/4 in.	3/8 in.	1/2 in.
Length	3 1/2 in.	5 1/2 in.	6 in.

EXTRA LONG COLD CHISELS No. 205

Width of Cutting edge	Length of Chisel		
1/2 in.	10 in.	12 in.	.....	.....	.....
5/8 in.	.....	12 in.	.....	.....	.....
3/4 in.	.....	12 in.	18 in.	24 in.	.....
7/8 in.	.....	12 in.	18 in.	24 in.	.....
1 in.	.....	12 in.	18 in.	24 in.	.....
1 1/4 in.	.....	.....	18 in.	24 in.	36 in.
1 1/2 in.	.....	.....	.....	24 in.	36 in.

STAR DRILLS No. 800

1/4 in. x 12 in.	1/2 in. x 18 in.	3/4 in. x 24 in.
5/16 in. x 12 in.	9/16 in. x 18 in.	7/8 in. x 24 in.
3/8 in. x 12 in.	5/8 in. x 18 in.	1 in. x 24 in.
7/16 in. x 12 in.	11/16 in. x 18 in.	1 1/4 in. x 24 in.
1/2 in. x 12 in.	3/4 in. x 18 in.	1 1/2 in. x 24 in.
9/16 in. x 12 in.	7/8 in. x 18 in.	1 3/4 in. x 24 in.
5/8 in. x 12 in.	1 in. x 18 in.	2 in. x 24 in.
11/16 in. x 12 in.	1 1/8 in. x 18 in.	.....
3/4 in. x 12 in.	1 1/4 in. x 18 in.	.....
7/8 in. x 12 in.	1 3/8 in. x 18 in.	.....
1 in. x 12 in.	1 1/2 in. x 18 in.	.....
1 1/8 in. x 12 in.	1 3/4 in. x 18 in.	.....
1 1/4 in. x 12 in.	.....	.....

Hargrave No. 584 Bull Points and No. 580 Rivet Busters are made in all standard sizes.

They must be TOUGH to stand this TEST

Ⓗ HARGRAVE

•

ALLOY STEEL COLD CHISELS

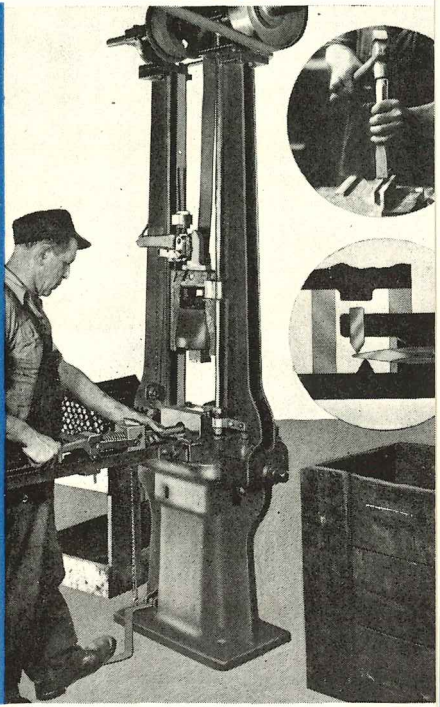
•

Cut Faster

•

Last Longer

•



The blades are tested in the Drop Testing Device to discover any flaws in the steel. Each one must cut a chip from heat-treated spring steel which is nearly as hard as the tool being tested, and the edge must stand it.

So — we know that you are getting practically 100% perfect tools from us.

But — you can still break them by repeated bending or wedging or cutting with one corner and a heavy hammer. And — chisels will not cut chilled iron or hardened steel. A Torch should be used for such work.

Hargrave PUNCHES and STAR DRILLS are also individually tested.

V-FLAT STAR DRILLS FOR ELECTRIC AND PNEUMATIC HAMMERS

(Patented)

The HARGRAVE "V-Flat" STAR DRILL cuts faster and shows less wear because the construction of the "V-Flat" Point, distributes the cutting action more uniformly over the surface being drilled than any other type of point.

It is much more easily sharpened with a file or a wheel than the four-point Star Drill.

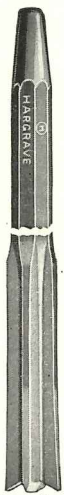
Trip-Hammer Forged from special analysis steel and properly tempered. Individually TESTED for HARDNESS and TOUGHNESS before going into stock, insuring satisfactory service.

Furnished in the following sizes to fit HARGRAVE Chucks, also chucks for Black & Decker and Van Dorn, Syntron and Millers Falls Electric Hammers.

For other makes of hammers it is necessary to use them with the HARGRAVE Chucks—listed on opposite page.

In ordering, specify by number which taper is required on each size of drill.

Specify Hargrave Taper Number in Ordering



Size Drill	Length				
1/4 in.	5 in.	8 in.	.....	.....	.....
5/16 in.	5 in.	8 in.	.....	.....	.....
3/8 in.	5 in.	8 in.	.....	.....	.....
7/16 in.	5 in.	8 in.	.....	.....	.....
1/2 in.	5 in.	8 in.	12 in.	.....	.....
9/16 in.	.....	8 in.	12 in.	18 in.	.....
5/8 in.	.....	8 in.	12 in.	18 in.	.....

Furnished with either No. 5 TAPER, which fits Black & Decker and Van Dorn Chucks, or No. 10 TAPER, which fits Syntron and Millers Falls Chucks.

11/16 in.	.....	8 in.	12 in.	18 in.	.....
3/4 in.	.....	8 in.	12 in.	18 in.	.....
7/8 in.	.....	8 in.	12 in.	18 in.	.....
1 in.	.....	8 in.	12 in.	18 in.	.....
1 1/8 in.	.....	.....	12 in.	18 in.	.....

Furnished with either No. 6 TAPER, which fits Black & Decker and Van Dorn Chucks, or No. 11 TAPER, which fits Syntron and Millers Falls Chucks.

1 1/4 in.	.....	.....	12 in.	18 in.	.....
1 3/8 in.	.....	.....	12 in.	18 in.	24 in.
1 1/2 in.	.....	.....	12 in.	18 in.	24 in.

Furnished with No. 12 TAPER, which fits Black & Decker and Van Dorn Chucks, also Syntron and Millers Falls Chucks.

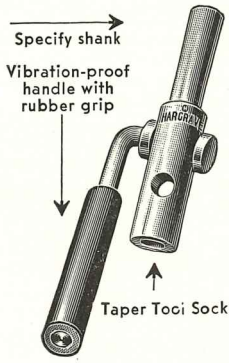
(Patented) WE ALSO MAKE STAR DRILLS FOR HAND USE

HARGRAVE CHUCKS FOR ELECTRIC AND PNEUMATIC HAMMERS
No. 120

The use of HARGRAVE Chucks eliminates the necessity of carrying duplicate stocks of Hammer Tools for various hammers.

Made of alloy steel, heat-treated, light but strong. No excess weight to absorb hammer blow.

This Chuck or Adapter can be furnished with shank to fit any standard make of Electric or Pneumatic Hammer and with taper tool socket to take HARGRAVE "V-Flat" STAR DRILLS.

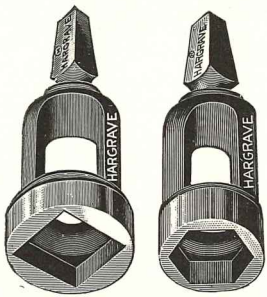


HARGRAVE CHUCK (Adapter) furnished with handle.

In ordering for Electric Hammers, specify MAKE and SIZE of hammer. Also give our number for TAPER which you wish the Tool Socket to take. (See listing of HARGRAVE Taper numbers on opposite page.)

BRACE WRENCHES — Square and Hexagon

Square Stock No.	Hexagon Stock No.	Size Opening, Inches
151	165	$\frac{5}{16}$
152	166	$\frac{3}{8}$
153	167	$\frac{7}{16}$
154	168	$\frac{1}{2}$
155	169	$\frac{19}{32}$
156	170	$\frac{5}{8}$
1560	171	$\frac{11}{16}$
157	172	$\frac{25}{32}$
158	173	$\frac{7}{8}$
159	174	1



PLUGGING CHISELS No. 963

Cutting Edge	Length	Diameter Steel	Weight, Doz.
3/16 in.	10 in.	1/2 in.	6 lbs. 3 ozs.
1/4 in.	10 in.	5/8 in.	9 lbs. 5 ozs.

Packed 1/2 dozen in a box.

FLOOR CHISELS No. 950

Size	Weight, Doz.
2 1/2 x 5/8 x 11 in.	12 lbs.
3 x 5/8 x 12 in.	14 lbs.

Packed 1/2 dozen in a box.

ALL-STEEL WOOD CHISELS No. 577

Cutting Edge	Diameter Steel	Length
1/2 in.	1/2 in.	10 in.
3/4 in.	5/8 in.	12 in.
1 in.	5/8 in.	12 in.
1 1/4 in.	3/4 in.	12 in.

Packed 1/2 dozen in a box.

WRECKING CHISELS

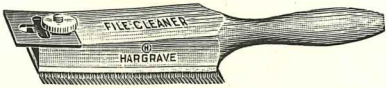
Stock	Cutting Edge	Diameter Steel	Length
No. 582—Straight	1 1/2 in.	3/4 in.	18 in.
No. 583—Bent	1 1/2 in.	3/4 in.	18 in.

Packed in bulk.

HARGRAVE

FILE CLEANER

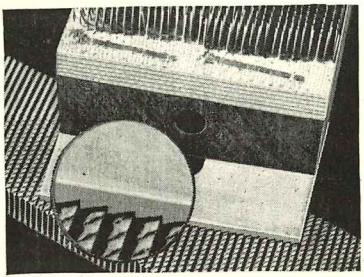
(WITH CHIP PLOW)

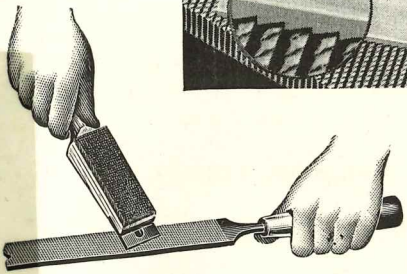


No. 366

The Chip Plow is pushed parallel to the file teeth, impressing the tooth pattern on the edge of the Plow. By continuing this operation over the part of the file that is clogged, all metal and other fouling is quickly and thoroughly removed.

When a file of different tooth spacing is to be cleaned another edge if the Plow is used. Plows last long but can be replaced at low cost. In the case of easily removed dirt the file card with its tempered steel wire teeth is used.





No. 366—File Cleaner with Chip Plow.
No. 364—File Cleaner without Chip Plow.

Printed in U. S. A.

HARGRAVE

"TESTED TOOLS"

THE CINCINNATI TOOL CO.

CINCINNATI 12, OHIO